Cereus giganteus

and Parry's Californian Cacturae

Sill. Jour Nov 1852

Vol XIV p. 335 &c

p. 325

QK495
.F210
E53
1852

From the American Journal of Science and Arts, 2nd Series, Vol. XIV.—Nov., 1852.

NOTES

ON THE

CEREUS GIGANTEUS

OF

SOUTH EASTERN CALIFORNIA,

AND SOME OTHER

CALIFORNIAN CACTACEAE.

BY

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In Emory's *Notes of a military Reconnaissance*, published in 1848 by order of Congress, I have ventured, from the data furnished by Col. Emory, to describe one of the largest Cacti ever known. Since then several travellers have met with this giant of the Gila country, and have confirmed the extraordinary accounts of the first discoverer. But no further scientific details were obtained till Col. Emory, now again in those regions, as the chief of the scientific corps of the U. S. boundary commission, had occasion early this spring (1852) to send an expediton down the Gila river. Dr. C. C. Parry, who was connected with this party, paid particular attention to the Cacti of that region, and made it an especial object carefully to examine the *Cereus giganteus*. From his very full notes, kindly communicated by Col. Emory, I have completed the description of the plant, with the exception of the flower and fruit, the account of which rests as yet on the verbal information obtained by Dr. Parry.

CEREUS GIGANTEUS, *Engelm. in Emory's Rep.*, p. 158.—Erectus, elatus, simplex, sæpius parce ramosus; ramis erectis caule cylindrico versus apicem sensim attenuato brevioribus; vertice parum depresso lanato; costis ad basin 12 versus apicem 18–20 rectis compressis obtusiusculis (versus basin obtusissimis) subrepandis; sinubus profundis angustis; areolis prominentibus orbiculatis albido-tomentosis; aculeis rectis, radialibus 11–17 brevioribus setaceis albis, centralibus 6 robustioribus longioribus (quorum imus robustissimus deflexus) tenuiter sulcatis albidis basi bulbosa nigris apice rubellis; floribus.... bacca... seminibus oblique obovatis nigris lævibus lucidis.

Dr. Parry found this splendid species, which the Indians name "Suwarrow," in rocky crevices and on gravelly table lands, from Tueson, north to the Rio Gila; he learned that it also occurs in Central Sonora, near the heads of streams which empty into the Gulf of California. Col. Emory observed it in 1846, from the middle towards the lower Gila; and Dr. LeConte, who explored California in 1850, informs me that he found it "common along the Gila to within thirty miles of its mouth, where it suddenly disappears." It is no doubt the same plant of which Humboldt makes mention in his work on New Spain, (II, p. 225,) where he says that the Spanish missionaries found at the foot of the Californian mountains nothing but sand or rocks, on which grew a cylindrical Cactus (Organos del Tunal) of extraordinary height.

Stems 25 to 60 feet high and 1 to 2 feet in diameter, not absolutely cylindrical, but thickest about the lower third, where generally the few (mostly 2–3) alternate or sometimes opposite branches start, and from thence slightly tapering toward the summit. Stems and branches marked by superficial transverse furrows, indicating, as it seems, the annual periods of growth, forming rings of 4 to 8 inches in height. Branches unequal, and always of less height than the main stem, mostly 5–10 feet long, with 12–18 ribs.

The stem consists of an exterior fleshy substance, 3–6 inches in thickness; this encloses a circle of bundles of ligneous fibres, corresponding with the intervals between the ribs; these bundles are of a loose texture, but tough and elastic, and form continuous columns or sticks of one-half to three inches in diameter, frequently anastomosing, increasing in thickness towards the base, and swelling into irregular, knotted, horizontally spreading roots. This frame-work remains after the decomposition of the fleshy parts. The exterior fleshy tissue passes between the bundles and forms in the centre of the stems the pith, of 4–6 inches diameter.

The ribs are mostly vertical, at the base about 12 in number, broad, rounded, 4 inches or more wide, with broad and shallow intervals, (also 4 or 5 inches wide,) worn, and destitute of spines.

Upwards, the number of ribs increases by bifurcation, or additional ribs originate in the intervals. There the ribs are "sharply rounded," 1½ inch wide, with deep intervals, 2¼ inches wide, densely set with spines. Areolæ somewhat elevated, circular, one inch distant from another. Radiate spines ½–¾ inch long; central spines stouter and longer; the lowest deflexed, ½–2½ inches long, the two next lateral, the three upper ones pointing upwards and outwards, and shorter.

Dr. Parry was informed that the flowers were produced in May and June, from the summit of stem and branches; they are said to be white, with a red centre, and three inches in diameter. The fruit matures in August, and is set with small spines: it is obovate, one and a half inches in diameter, red, pulpy, of sweet taste. The seeds obtained by Col. Emory and by Dr. LeConte have already been noticed in Emory's Report; they are 0·7 lines long, obovate, obliquely truncate at base, black, smooth, shining. Embryo hooked, without an albumen; cotyledons foliaceous, unequal, incumbent.

My opinion that our plant is a true *Cereus* and not a *Pilocereus*, which was based on the structure of the seeds (the foliaceous, not globose cotyledons), appears to be further confirmed by the fact that this Cactus bears no hair-like spines, and no *cephalium*, or distinct woolly head, and that the fruits are (as is said) spinulose and not scaly. It is by far the largest *Cereus* known; and only some *Pilocerei* approach it in size.

The only *Cactaceæ* thus far known to grow in California were those vaguely noticed by Humboldt (the "Organos del Tunal" and some Opuntiæ); the *Echinocactus viridescens* and *Cereus Californicus* discovered by Nuttall in 1834; the Cacti found on the Gila by Col. Emory in the fall of 1846 and mentioned in his report; *Mamillaria Goodrichii*, lately described by Scheer, of Kew, and *Echinocactus Californicus* of Monville.

Dr. Parry has in the years 1849 and 1850, when he was also attached to Col. Emory's corps in the survey of the Mexican boundary, examined and described ten or eleven distinct species of Cactaceæ, all found along the southern boundary of California, from the sea-coast to the mouth of the Gila. He, as well as Dr. LeConte, states that much farther to the north no species of this family are found, except an Opuntia, cultivated and now naturalized about the missions.

I subjoin here a short memorandum of Dr. Parry's Californian Cactaceæ, reserving a fuller description for a more extended memoir.

1. Mamillaria tetrancistra, n. sp.: subglobosa; aculeis radialibus brevibus albis numerosis, centralibus 4 longioribus cruciatis uncinatis; floribus centralibus parvulis flavido-rubellis; stig-

matibus 3; bacca coccinea pyriformi; seminibus nigris hilo spongioso fusco auctis.

From San Diego to the junction of the Gila with the Colorado. —*M. Goodrichii*, Scheer, obtained on the island of Cerro on the coast of California, is distinguished by the lower central spine only being hooked, by much smaller tubercles, etc.

2. Echinocactus viridescens, *Nutt.* Depressed; berry subglobose green, coated with lunate membranaceous scales. On dry hills and ridges near San Diego.

3. E. viridescens, *β*? cylindraceus, is distinguished by its oval or cylindrical shape, larger size, longer spines. Found near San Felipe, on the eastern slope of the California mountains.

Note.—E. Californicus, *Monv.*, is the name of young plants raised from seed in Europe. I am informed that neither the identity nor the native country of these seedlings is satisfactorily known.

4. Cereus Emoryi, n. sp.: caule prostrato; ramis erectis cylindraceis 15-costatis; aculeis radialibus 40–50, centrali singulo robustiore porrecto; bacca globosa spinulosa.

In thick patches, on dry hills near the sea shore, about the boundary line. Erect branches 6–9 inches high.

5. C. Engelmanni, *Parry in litt.*: caulibus pluribus pedalibus; costis 13 tuberculatis; aculeis 4 centralibus inæqualibus radiales tenuiores superantibus; bacca ovali aculeata pulposa.

Mountains about San Felipe, on the eastern declivity of the Cordilleras.

Note.—C.? Californicus, *Nutt. in Torr. and Gray's Flora*, is most probably a cylindraceous Opuntia, with "small yellow flowers," which I cannot now identify.

6. Opuntia Engelmanni, *Salm.* San Diego, on dry hillsides, in patches, 4 to 6 feet high. Originally discovered about Chihuahua, this species appears to extend westward to the Pacific.

7. O. Tuna, *Mill.*, is cultivated for fences, and naturalized about the missions; called "Tuña." It is 10–15 feet high; the fruit large and edible.

8. O. prolifera, n. sp.: caule erecto ligneo; ramulis cylindricis tuberculatis divaricatis; aculeis fuscis vaginatis; bacca spinulosa.

San Diego, on arid hills and in dry creek beds. Plant 3–8 feet high, forming impenetrable thickets. Near *O. arborescens* of New Mexico; but the red flowers smaller, the berry spinous, etc.

9. O. serpentina, n. sp.: procumbens; articulis cylindricis elongatis tuberculatis; aculeis 7–9 vaginatis; bacca sicca hemispherica aculeatissima.

Dry hillsides, San Diego.

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9. *On the Cereus Greggii;* by Dr. ENGELMANN.—[The following observations, were sent in as a substitute for a sentence on page 339, but were received too late for insertion at that place.—EDS.]

The curious *Cereus Greggii*, E., has been noticed from the Pecos river east to the Mimbres Mountains west of El Paso, and from Chihuahua towards the mouth of the Gila, but always in isolated specimens, very scattering and rare. The fruit which was figured in Emory's Report, is deep scarlet, succulent, with short spines on the pulvilli; it is oval, sessile and attenuated at base, and *not stipitate*, but long acuminate, and with the long tube of the flower curved downwards, remaining attached to its point. The seeds are black and opaque, rugose and pitted, and about one line in diameter. The root is large, turnip-shaped, and produces many stems, 2–4 feet high. The young plants raised from seeds are dark purplish; triangular root not yet enlarged.

Collections of Cactaceæ have also been recently made by Dr. John M. Bigelow of the Boundary Commission, who has sent them to me for examination. My collection under study includes about 12 species of Mamillaria, 8 Echinocacti, 12 Cerei and 12 Opuntiæ, most of which are new forms.

St. Louis, Sept. 7th, 1852.

10. O. RAMOSISSIMA, n. sp.: caule erecto ligneo divaricato-ramosissimo; articulis gracilibus cylindricis tuberculatis cæsiis; aculeis subsolitariis saccato-vaginatis; bacca sicca tuberculata setosa et aculeata.

Gravelly soil near the Colorado, and in the desert. Plant two feet high; the joints half an inch in diameter. Approaches the Opuntia cylindraceæ graciliores.

11. O. PARRYI, n. sp.: caule prostrato; articulis adscendentibus tuberculatis; setis fuscis; aculeis brevibus albidis, singulo longiore deflexo; bacca subglobosa setoso-aculeata.

Eastern slope of the California mountains, near San Felipe. Joints four to eight inches long; the longest spines half an inch long. Flower one and a half inch in diameter, yellowish-green. Approaches the Opuntiæ clavatæ.

Mr. Charles Wright, well known to the botanical world by his collections made in the southwest, now also attached to the Mexican boundary commission, has, under the instruction of Col. Graham, made large and interesting collections of Cacti in western Texas and southern New Mexico, and sent them to me for examination.

It is impossible here to give as full an account of them as would be desirable; but most of them are now in cultivation and will be described hereafter. Most of the Cactaceæ discovered by Wislizenus, Fendler and Gregg are among them, together with a considerable number of new species. I will here only state that my doubts in regard to the fruit of *Cereus Greggii*, expressed in my account of the plant in Emory's Report, have been entirely dispelled by Mr. Wright. He says that the plant is large, much branched, has a very large fleshy root, generally implanted in hard stony soil, and the pulpy scarlet fruit is just as figured in Emory's Report, ~~stiped at base and~~ attenuated above. The seeds he sends are black and opaque, rugose and pitted, about one line in diameter. They have germinated well with me. This same plant has been sent from Chihuahua to Kew by Mr. Potts; and has been described by Prince Salm as *Cereus Pottsii*, which name however must give way to the prior name, *C. Greggii*. It is every way a very singular plant, and though found from western Texas and Chihuahua to El Paso, the copper mines, and the lower Gila, appears to be rare every where.